



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,722	09/12/2003	John M. Kogler III	200315232-1	8307

22879 7590 10/16/2007

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

LAMB, CHRISTOPHER RAY

ART UNIT	PAPER NUMBER
----------	--------------

2627

MAIL DATE	DELIVERY MODE
-----------	---------------

10/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/661,722

Applicant(s)

KOEGLER ET AL.

Examiner

Christopher R. Lamb

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4 and 6-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4 and 6-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 21, 2, 4, 22, 7, 8, 13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda (US 2002/0191517) in view of Klein (US 6,145,368).

Regarding claim 21:

Honda discloses:

An optical disk drive (Fig. 6), comprising:

a spindle motor to turn an optical disk (Fig. 6: 56);

an OPU to apply an image to a coating within a label region of the optical disk (Fig. 6: 67).

Honda does not disclose:

an encoder configured to track substantially identical disk speed features in a first annular ring at a first radial position on the optical disk in a region distinct from the label region so as to thereby obtain disk speed data, the disk drive further configured to track disk angular orientation features different from the disk speed features in a second annular ring at a second radial position on the optical disk so as to thereby obtain angular orientation data, the second annular ring abutting the first annular ring, the disk angular orientation features different from the disk speed features, and at least some of

the disk angular orientation features having the same angular position as at least some of the disk speed features.

However, Honda does disclose tracking the disk speed (paragraph 37) and angular orientation (paragraph 38).

Klein discloses:

an encoder (the encoder is shown in Fig. 1A, but the specific embodiment relied upon is that of Fig. 2) configured to track substantially identical disk speed features in a first annular ring at a first radial position on a disk (Fig. 2: 104) so as to thereby obtain disk speed data (column 1, lines 25-45), the disk drive further configured to track disk angular orientation features different from the disk speed features in a second annular ring at a second radial position on the optical disk (Fig. 2: 102) so as to thereby obtain angular orientation data (column 1, lines 24-45), the disk angular orientation features different from the disk speed features (apparent from Fig. 2), and at least some of the disk angular orientation features having the same angular position as at least some of the disk speed features (apparent from Fig. 2).

It would have been obvious to one of ordinary skill in the art to include in Honda an encoder configured to track substantially identical disk speed features in a first annular ring at a first radial position on the optical disk in a region distinct from the label region so as to thereby obtain disk speed data, the disk drive further configured to track disk angular orientation features different from the disk speed features in a second annular ring at a second radial position on the optical disk so as to thereby obtain angular orientation data, the disk angular orientation features different from the disk

speed features, and at least some of the disk angular orientation features having the same angular position as at least some of the disk speed features.

The motivation would be to measure the disk speed and angle directly from the disk itself, improving measurement accuracy.

Honda in view of Klein does not disclose:

“the second annular ring abutting the first annular ring.”

However, it would have been obvious to one of ordinary skill in the art to include in Honda in view of Klein wherein the second annular ring abuts the first annular ring.

The rationale is as follows:

Whether the first annular ring abuts the second annular ring makes no difference to its purpose: the speed and angular tracking works no better or worse whether the rings abut or not.

Furthermore, the applicant's specification, as originally filed, does not disclose any benefit or reason to have the rings abut one another. Applicant merely discloses embodiments where they abut (as per Fig. 1) and other embodiments where they do not (as per Fig. 2).

It has been held (see, e.g., *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)) that shifting the position of a part is obvious when it does not modify the operation of the invention. Therefore shifting the position of the annular rings of Honda in view of Klein so that they abut would have been obvious to one of ordinary skill at the time of the invention.

Regarding claim 2:

In Honda in view of Klein the encoder is additionally configured to track the disk angular orientation features, the disk angular orientation features molded within the region distinct from the label region (the two light emitting and light receiving devices taught by Klein Fig. 1 together constitute "the encoder").

Regarding claim 4:

Honda in view of Klein discloses a control procedure to coordinate disk speed data from the encoder with the OPU during application of the image (Honda discloses coordinating the disk speed signal with the optical pickup in paragraph 37).

Regarding claim 22:

This claim is similar to claim 21 except it is a claim to a processor-readable medium. Honda discloses a processor-readable medium (required by the system controller and/or host computer of Fig. 6). All other elements of this claim have already been identified in earlier rejections.

Regarding claim 7:

This claim is similar to claim 2 and similarly rejected.

Regarding claim 8:

In Honda in view of Klein the controlling comprises instructions for processing the disk speed data to determine times when the speed of the spindle motor should be increased and times when the speed of the spindle motor should be decreased to maintain desired speed (Honda paragraph 37: "a spindle servo circuit controls...the spindle motor so as to rotate constantly at a rotating speed").

Regarding claims 13 and 16:

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

3. Claims 3, 6, 9, 11, 12, 14, 15, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Klein as applied to claim 21 above, and further in view of Osborne (US 5,107,107).

Regarding claim 3:

Honda in view of Klein discloses an optical disk drive as discussed above.

Honda in view of Klein does not disclose wherein the OPU is additionally configured to track the disk angular orientation features, the disk angular orientation features defined within the label region.

In Honda in view of Klein, light from an encoder passes through slits in a disk and is measured on the other side. This is a transmissive scheme.

Osborne discloses that a reflective scheme may be used in place of a transmissive scheme (column 6, lines 1-10). Osborne discloses that an encoder may still be used with this scheme, but that the light source of an optical disk drive (an OPU) is superior (column 11, lines 25-60).

Therefore it would be obvious to one of ordinary skill in the art to include in Honda in view of Klein wherein the OPU is additionally configured to track the disk angular orientation features, the disk angular orientation features defined within the label region.

The motivation would be to use the OPU to track the disk angular orientation features instead of a conventional encoder: Osborne discloses that using an OPU overcomes the weaknesses of a conventional encoder.

Regarding claim 6:

This is similar to claim 3 and is similarly rejected.

Regarding claim 9:

In Honda in view of Klein, and further in view of Osborne, the interpreting comprises instructions for distinguishing between a first and a second signal received from the encoder, wherein the first and second signal result from differences in light reflection correspond to the presence or absence of the disk speed features (taught by Klein, with the additional teaching of Osborne, as discussed above).

Regarding claim 11:

In Honda in view of Klein, and further in view of Osborne, the interpreting comprises instructions for:

distinguishing between a first and a second signal received from the encoder, wherein the first signal results when light is reflected off a mirrored surface (taught by Osborne column 6 lines 1-10).

Honda in view of Klein, and further in view of Osborne, does not disclose wherein "the second signal results when light is reflected by a substantially circular molded pit that also deflects a portion of the light away from the sensor."

However, Osborne discloses that in an optical disc information can be indicated through a substantially circular molded pit that also deflects a portion of the light away from the sensor (column 8, lines 35-50).

It would have been obvious to one of ordinary skill in the art to include in Honda in view of Klein, and further in view of Osborne, wherein the second signal results when light is reflected by a substantially circular molded pit that also deflects a portion of the light away from the sensor, as further taught by Osborne.

The rationale is as follows:

Using substantially circular molded pits to indicate information by monitoring a reflected light signal is the fundamental premise of all optical recording media, as disclosed by Osborne. Therefore one of ordinary skill in the art could certainly have created substantially circularly molded pits to create the signal required by Honda in view of Klein, and further in view of Osborne, with predictable results.

Regarding claim 12:

In Honda in view of Klein, and further in view of Osborne, the interpreting comprises instructions for:

distinguishing between the output signals, wherein the output signal are associated with levels of light reflectivity (taught by Osborne as discussed above) within a region defined on a mirror surface (it must be mirrored if it is reflective) adjacent to the coating on the label side of the disk (the entire operation takes place on the label side of the disc as taught by Honda).

Regarding claim 14:

Honda in view of Klein, and further in view of Osborne, discloses an optical disk drive as discussed above.

Honda in view of Klein, and further in view of Osborne discloses means for tracking, with an OPU, disk angular orientation data defined by disk angular orientation features; and

Honda in view of Klein, and further in view of Osborne, does not disclose means for passing the disk angular orientation data to the means for labeling to create an image having a desired angular orientation on a coating on the optical disk.

It would have been obvious to one of ordinary skill in the art to include in Honda in view of Klein, and further in view of Osborne, means for passing the disk angular orientation data to the means for labeling to create an image having a desired angular orientation on a coating on the optical disk (already implied by Honda paragraph 38).

The motivation would have been to print an image having a desired orientation to a reference position (this motivation is already present in Honda paragraph 38, but Honda itself did not disclose means to accomplish it).

Regarding claim 15:

Honda in view of Klein, and further in view of Osborne, discloses wherein the disk angular orientation features are molded features (Osborne column 6 lines 1-30) located radially inside an area on the optical disk reachable by an OPU, to produce the disk angular orientation data (taught by Osborne as discussed above).

Regarding claims 17, 19, and 20:

All elements positively recited have already been identified with respect to earlier rejections. No further elaboration is necessary.

4. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Klein, and further in view of Osborne as applied to claim 3 above, and further in view of Nagashima (US 5,670,947).

Regarding claim 10:

Honda in view of Klein, and further in view of Osborne, discloses a processor-readable medium as discussed above.

In Honda in view of Klein, and further in view of Osborne, the interpreting comprises instructions for:

distinguishing between a first and a second signal received from the encoder, wherein the first signal results when light is reflected off a mirrored surface to a sensor (taught by Osborne as discussed above).

Honda in view of Klein, and further in view of Osborne, does not disclose wherein "the second signal results when light is reflected by a saw tooth feature that also deflects a portion of the light away from the sensor."

However, Osborne does teach that one surface should reflect light back to the sensor and the other should not (column 6, lines 5-50).

Nagashima discloses a saw tooth feature that deflects a portion of light away from a sensor (column 3, lines 29-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Honda in view of Klein, and further in view of Osborne, wherein

Art Unit: 2627

the second signal results when light is reflected by a saw tooth feature that also deflects a portion of the light away from the sensor.

The rationale is as follows:

Osborne discloses detecting the presence of absence of a reflected signal with a sensor. Nagashima discloses a method of deflected a reflected signal so that a sensor does not detect. One of ordinary skill could have combined these two elements together with predictable results.

Regarding claim 18:

All elements positively recited have already been identified with respect to earlier rejections. No further elaboration is necessary.

Response to Arguments

5. Applicant's arguments, see pages 12-13, filed August 16th, 2007, with respect to the rejections under 35 USC 112 first and second paragraph have been fully considered and are persuasive. This rejection of claims 2-3, 6-7, and 21-22 under 35 USC 112 has been withdrawn.

6. Applicant's arguments with respect to the 35 USC 103 rejections of claims 1-4 and 6-22 have been considered.

Most arguments are moot due to the new grounds of rejection. However, Applicant makes a few arguments that they may still be considered applicable.

First, on page 15, referring to Honda in view of Klein as previously applied to claims 1, 2, 21, and 22, Applicant argues that "there is no articulated reason with some

rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed.”

The Examiner asserted that this combination would improve measurement accuracy. The Applicant argues with this assertion, stating that there is nothing in Klein to indicate that its teaching would provide improved accuracy over the teaching of Honda.

However, it is generally known in the art that measuring, e.g., speed directly from the disc is more accurate than other methods. See, for example, Cordano et al. (US 3,426,337; cited in an earlier Office Action), column 1, lines 40-60: “it is, therefore, highly desirable to be able to employ a closed loop system by which control of position is directly referred to the record member itself.” Thus one of ordinary skill would have reasonably expected that the teaching of Klein would be more accurate than the system employed by Honda.

Also, the Applicant argues that Klein is not directed to labeling optical discs, and thus “the rationale impermissibly uses the Applicants’ disclosure as a blueprint or in hindsight for the rejection.”

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a

reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The rejection takes into account only knowledge that was within the level of ordinary skill at the time the claimed invention was made. Honda's disclosure teaches writing to the label side of an optical disc, but does not provide a method for measuring the speed and/or angular orientation directly from the disc. One of ordinary skill would have understood the superior accuracy of measuring speed and/or angular orientation directly from the disc, and since Klein is directed toward measuring the speed and/or angular orientation of a rotating disc, the rationale to combine the references follows directly.

Also, Applicant argues, on pages 16-17, with the teaching of Nagashima as applied to Honda in view of Nakamura. This rejection has no longer been applied to any claims, but the teaching of Nagashima has been applied to Honda in view of Klein, and further in view of Osborne, in order to reject claims 10 and 18 as noted above, and some of Applicant's arguments may still be applicable.

Applicant argues that Nagashima does not "reflect some portion of the light towards the sensor, as required by claim 10." However, claim 10 does not require that the sawtooth portion reflect light toward the sensor, only that it reflect it. Since any surface will reflect at least some amount of light, this argument is not persuasive.

Applicant also argues that because Nagashima is directed toward a smoke detector, there is no motivation to combine it with the other references. However,

Nagashima is only being relied on to teach a molded shape that prevents reflected light from reaching a sensor. This is directly applicable to the matter at hand.

The rest of Applicant's arguments have been considered but are moot in view of the new grounds of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (571) 272-5264. The examiner can normally be reached on 9:00 AM to 6:30 PM Monday to Friday.

Art Unit: 2627

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRL 10/5/07

/William Korzuch/
SPE, Art Unit 2627